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EXAMINER	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/580,785	HUDGEON ET AL.	
	Examiner	Art Unit	
	JONATHAN G. STERRETT	3623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 May 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-40* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-40* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *5-24-2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Summary

1. This Non-Final Office Action is responsive to the filing of 24 May 2006. Currently **claims 1-40** are pending in the application.

Claim Objections

Claims 29 and 37 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Claim 29 recites a computer readable medium for performing the method of claim 1. This is improper because it would be possible to infringe a computer readable medium without infringing the method of claim 1 (note the phrase "for causing a computer to perform the method of claim 1" is an intended use limitation and does not further limit the claim).

Similarly, **Claim 37** recites "a computer operating under the control of the medium of claim 29". It would be possible to infringe Claim 37, i.e. a computer operating under control of software, without infringing Claim 29. Thus Claim 37 is improper.

Claim Rejections - 35 USC § 101

2. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-28 and 38-40 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

A claimed process is eligible for patent protection under 35 U.S.C. § 101 if:

"(1) it is tied to a particular machine or apparatus, or (2) it transforms a particular article into a different state or thing. See Benson, 409 U.S. at 70 ('Transformation and reduction of an article 'to a different state or thing' is the clue to the patentability of a process claim that does not include particular machines.'); Diehr, 450 U.S. at 192 (holding that use of mathematical formula in process 'transforming or reducing an article to a different state or thing' constitutes patent-eligible subject matter); see also Flook, 437 U.S. at 589 n.9 ('An argument can be made [that the Supreme] Court has only recognized a process as within the statutory definition when it either was tied to a particular apparatus or operated to change materials to a 'different state or thing' '); Cochrane v. Deener, 94 U.S. 780, 788 (1876) ('A process is...an act, or a series of acts, performed upon the subject-matter to be transformed and reduced to a different state or thing.').7 A claimed process involving a fundamental principle that uses a particular machine or apparatus would not pre-empt uses of the principle that do not also use the specified machine or apparatus in the manner claimed. And a claimed process that transforms a particular article to a specified different state or thing by applying a fundamental principle would not pre-empt the use of the principle to transform any other

article, to transform the same article but in a manner not covered by the claim, or to do anything other than transform the specified article." (In re Bilski, 88 USPQ2d 1385, 1391 (Fed. Cir. 2008))

Also noted in Bilski is the statement, "Process claim that recites fundamental principle, and that otherwise fails 'machine-or-transformation' test for whether such claim is drawn to patentable subject matter under 35 U.S.C. §101, is not rendered patent eligible by mere field-of-use limitations; another corollary to machine-or-transformation test is that recitation of specific machine or particular transformation of specific article does not transform unpatentable principle into patentable process if recited machine or transformation constitutes mere 'insignificant post-solution activity.'" (In re Bilski, 88 USPQ2d 1385, 1385 (Fed. Cir. 2008)) Examples of insignificant post-solution activity include data gathering and outputting. Furthermore, the machine or transformation must impose meaningful limits on the scope of the method claims in order to pass the machine-or-transformation test. Please refer to the USPTO's "Guidance for Examining Process Claims in view of In re Bilski" memorandum dated January 7, 2009, http://www.uspto.gov/web/offices/pac/dapp/opla/documents/bilski_guidance_memo.pdf .

It is also noted that the mere recitation of a machine in the preamble in a manner such that the machine fails to patentably limit the scope of the claim does not make the claim statutory under 35 U.S.C. § 101, as seen in the Board of Patent Appeals

Informative Opinion Ex parte Langemyr et al. (Appeal 2008-1495),

http://www.uspto.gov/web/offices/dcom/bpai/its/fd081495.pdf .

Claims 1, 18, 24 and 38 are not tied to a particular machine or apparatus nor do they transform a particular article into a different state or thing, thereby failing the machine-or-transformation test; therefore, **Claims 1, 18, 24 and 38** are non-statutory under § 101. **Claims 2-17, 19-23, 25-28 and 39-40** are not statutory at least for the reasons given above for **Claims 1, 18, 24 and 38**.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. **Claims 1-11, 15, 17-20, 30, 31, 33, 35-37** are rejected under 35 U.S.C. 103(a) as being unpatentable over Zhang 2003/0152034 (hereinafter Zhang).

Regarding **Claim 1**, Zhang teaches:

1. (Currently amended) A computerised method of enabling the selection of a service provider for performing a service said method including:

(a) processing a service enquiry for a particular service;

(b) retrieving historical expectation differential data associated with said service in respect of a plurality of service providers in response to said service enquiry;

Para 10, 11, service enquiries are received for peers (i.e. those providing a particular service over the internet)

Para 14, the data predicting performance (i.e. historical expectation differential data) is retrieved

(c) processing said historical expectation differential data, to arrive at comparable expectation differential data in respect of said plurality of service providers for enabling the selection of a service provider to perform the particular service;

para 14, the data capture is processed to provide comparable data of peers on a network (i.e. service providers) to select which peer is most suitable.

(d) capturing expectation differential data relating to the provision of the particular service by the selected service provider, and

para 38, historical data is gathered regarding the performance of a peer on a network;

para 43-44, data is gathered from peers related to the provision of network services.

(e) updating the historical expectation differential data by incorporating said captured expectation differential data.

para 50, the QOS database is updated using the data captured measuring network performance, see also para 43 and para 105 (network condition database).

Zhang teaches the above steps being performed in the selection of peers by evaluating QOS in the network for those peers. Zhang does not teach evaluating QOS for the selection of service providers (i.e. in a paying relationship). However Official Notice is taken that evaluating QOS for service providers is old and well known in the art and would have been obvious to modify Zhang to include evaluating service providers using the QOS techniques, because it would have provided a predictable result in choosing service providers based on the QOS evaluation techniques of Zhang.

Regarding **Claim 2**, Zhang teaches:

2. (Original) A computerised method as claimed in claim I which includes repeating steps (a) to (e) to enable the selection of a service provider for the provision of subsequent services with the aid of updated expectation differential data.

Para 104, 106, the testing of network performance is repeated (as outlined in para 106) and fed back into the results (i.e. the historical results that are stored in the database discussed in para 104). This analysis is done for candidate preselection (i.e. selection of a service provider).

Regarding **Claim 3**, Zhang teaches:

3. (Currently amended) A computerised method as claimed in claim 1 which includes compiling an expectation differential dataset including historical expectation differential data components associated with the provision of at least one previous service by each service provider.

Para 107, various QOS metrics (i.e. historical expectation differential data components) are provided by the analysis and measurement of the services. These QOS metrics are developed based on measurement and analysis of network performance of various service providers on the network.

Regarding **Claim 4**, Zhang teaches:

4. (Currently amended) A computerised method as claimed in claim l which further includes defining at least one performance expectation for the performance of the service, and monitoring this against actual performance.

Para 43 and 44, one performance expectation is speed and latency – this is measured against what is specified (see para 44).

Regarding **Claim 5**, Zhang teaches:

5. (Currently amended) A computerised method as claimed in claim l wherein the expectation differential data includes data derived from both performance expectation data and actual performance data.

Para 43 and 44, the difference between what is expected from a peer and what is provided (e.g. latency, i.e. actual performance data) provides a differential which is used to make a selection for a service provider (e.g. if a service provider does not provide the expected or required latency, then that service provider is not selected).

Regarding **Claim 6**, Zhang teaches:

6.(Currently amended) A computerised method as claimed in claim 5 that includes;

processing said captured actual performance data and said performance expectation data to generate data indicative of the differential between the actual performance of past services and a corresponding performance expectation; and

para 43, 44, the actual performance data of the peers with respect to latency and the required latency data (i.e. performance expectation) is processed to generate a list of suitable peers.

updating the historical expectation differential data by incorporating said processed differential performance data.

Para 43, the database includes current and previous (i.e. historical) data relating to QOS data for the peers - see also para 50.

Regarding **Claim 7**, Zhang teaches:

7. (Currently amended) A computerised method as claimed in claim l that includes

retrieving historical performance data relating to the actual performance of past jobs and associated performance expectation data for the past jobs in respect of a plurality of service providers in response to said service enquiry;

para 43, the CS retrieves data from it's database regarding the past performance of potential peers from it's database. (see also para 105 re the storage and retrieval of past performance data).

processing said data related to the actual performance of past jobs and corresponding performance expectation data to generate data indicative of the differential between the actual performance of past services and a corresponding performance expectation.

para 43, 44, the data retrieve regarding the past performance of peers is compared to the requirements (i.e. performance expectation data – e.g. latency, the peer is currently available, etc.) to generate a list of potential peers (i.e. data indicative of the differential between past performance and a performance expectation). – see also para 45 re the required QOS parameters.

Regarding **Claim 8**, Zhang teaches:

8. (Currently amended) A computerised method as claimed in claim l wherein the historical expectation differential data includes performance data relating to at least one of the following:

the cost of past services the quality of past services, with the quality of past services including the timeliness of the provision of past service; the duration of past service; and the outcome of the past services.

Para 45, the performance data relates to QOS (latency, i.e. the timeliness of the provision of past service)

Regarding **Claim 9**, Zhang teaches:

9. (Currently amended) A computerised method as claimed in claim1 wherein the comparable expectation differential data in respect of each of the service providers is combined with at least one of comparable cost data, and comparable quality data, to derive a comparable performance index for each service provider for enabling the selection of a service provider to perform the particular service.

Para 38, 55, there are various QOS parameters that are evaluated for selection of a peer on a network –

Para 77, a variety of QOS metrics are derived

Para 104 – a variety of discriminative features are used to determine the discriminative QOS parameters – i.e. the expectation differential data is combined with other QOS (i.e. comparable quality data) to select the best service providers.

Regarding **Claim 10**, Zhang teaches:

10.(Currently amended) A computerised method as claimed in claim 5 wherein at least one performance expectation for the performance of the service is set at least in part by one or more of the following: a buyer, a chosen service provider, a third party.

Para 44, a source peer (i.e. a third party) sets the performance expectation (e.g. latency).

Regarding **Claim 11**, Zhang teaches:

11. (Currently amended) A computerised method as claimed in claim 5 which includes:

enabling at least one performance expectation for the service to be varied; and

capturing as historical expectation differential data, data relating to a variation in at least one performance expectation for the service.

Para 44, a variety of performance expectations (e.g. allowable number of probes, minimum desired latentcy) can be varied (as determined by the source peer). This change is captured when other peers are evaluated against it as part of the selection process.

Regarding **Claim 15**, Zhang teaches:

15. (Currently amended) A computerised method according to claim 4 wherein defining at least one performance expectation for the performance of the service is performed on the basis of at least one of the following: a default performance expectation; best practice data; the actual historical performance of one or more service providers; a service plan proposed by the service supplier; and one or more quotations provides respective service providers.

Para 44, a default performance expectation, e.g. that the peer is connected online.

Regarding **Claim 17**, Zhang teaches:

17. (Original) A computerised method according to claim 9 wherein the combination of the comparable cost data and comparable quality data and comparable expectation differential data is performed in accordance with weightings reflecting the relative importance of the comparable cost data, comparable quality data and comparable expectation differential data to the buyer.

Zhang teaches comparable expectation differential data and comparable quality data, as discussed above in Claim 9.

Zhang also teaches combining the data to provide a way to predict performance based on various QOS metrics (see para 106, a weighted average model is used).

However, Zhang does not teach combining in comparable cost data and does not teach combining cost, quality and expectation differential data to provide a composite metric.

Official Notice is taken that:

Comparable cost data is used in the evaluation of services to determine attractiveness (e.g. a cost / benefit analysis).

Using a weighted average approach to combine metrics, where the weights reflect the relative importance of the separate metrics, is old and well known.

It would have been obvious to one of ordinary skill in the art at the time of the invention to have modified the teachings of Zhang, regarding combining QOS metrics to determine the quality of service to have include using a cost of service metric that is combined in a weighted average approach, because it would have provided a predictable result in using known additional metrics for evaluating quality of service (i.e. including cost) where those metrics are combined in a known way using a weighted average approach because it would have provided a predictable result to determine a composite metric of weighted individual metrics where the weights reflect the relative importance of the individual metrics.

Claims 18-20, 30, 31, 33, 35-37 recite similar limitations to those addressed by the rejection of **Claims 1-11, 15 and 17** above and are therefore rejected under the same rationale.

Furthermore regarding **Claims 30, 31, 33 ,35 and 36**, Zhang teaches a computer system (para 32) which contains a processor (para 30) and utilizes modules (i.e. components) for the data analysis (see para 104 - Background data analyzer module, i.e. a **processor**; and para 29, a variety of computer modules; para 105; active probing results module, i.e. **an enquiry process component**) and a **database** (the CS database discussed above).

While the background data analyzer module, active probing results module and processor taught by Zhang performs the functions of the **processor**, **data capture component**; and **performance expectation generation component,** having a single component that performs the functions of two components does not convey a patentable distinction because it is well settled that making components integral does not convey patentability (In re Larson, 340 F.2d 965, 968, 144 USPQ 347, 349 (CCPA 1965)). Also the performing of functions in separate components rather than a single component does not make a patentable distinction because it is well settled that making components separable does not convey patentability (In re Dulberg, 289 F.2d 522, 523, 129 USPQ 348, 349 (CCPA 1961)). Thus the examiner's position is that it would have been obvious to provide the claimed functionalities in separate modules as claimed

because it is well settled that making components separable or integral does not convey patentability

4. **Claims 12-14, 16, 21-29, 32, 34, 38-40** are rejected under 35 U.S.C. 103(a) as being unpatentable over Zhang 2003/0152034 (hereinafter Zhang) in view of "G-QoSM: Grid service discovery using QoS properties", [PDF] from psu.edu, **Rashid** J Al-Ali, OF Rana, DW Walker, S Jha… - Computing and …, 2002 – Citeseer, (hereinafter **Rashid**)

Regarding **Claim 12**, Zhang teaches evaluating QOS on a network between a number of peers. Zhang teaches that after an initial QOS evaluation, that the probes of others serves to update what has been stored regarding QOS among members in a network (see para 106, the probes by peers is used to update the CS database). This suggests that as time goes on, a current picture of network QOS is maintained by various probes regarding the QOS of peers in a network. Given that para 44 teaches that source peers have requirements for connecting, this suggests that updated QOS information in the CS database would require a peer switching from a peer who initially met the QOS requirements but later did not, in order to meet the QOS requirements. However Zhang does not explicitly teach enabling one of the peers logging on to a network (i.e. a procurer of a service) to approve or deny a variation to a performance expectation as per:

12. (Currently amended) A computerised method according to claim 11 including

enabling a procurer of the service to approve or deny variation to a performance expectation, or to accept a new expectation that is between the last agreed expectation and the requested expectation.

Rashid teaches different classes of providing service and ensuring QOS requirements are met (bottom page 4). Here Rashid teaches that a procurer of a service can approve or deny variation to a performance expectation (i.e. Guaranteed service – the constraints are firm – no deviations or variations allowed; or Controlled Load – the requirements are specified, but can be varied depending on what service can be found; also “Best-Effort Service” allows variation to the requirements in the interest of providing the procurer with some service, rather than noe).

Zhang and Rashid both address QOS issues in managing a network, thus they both are analogous art.

Rashid further teaches this approach provides for service selection based on QOS (page 1 para 1). Rashid suggests this provides for flexibility in providing service, since if the requirements for QOS cannot be met, then at least some service can be provided.

It would have been obvious to one of ordinary skill in the art at the time of the invention to have modified the teachings of Zhang, regarding providing QOS requirements for connecting over a network to have included the teachings of Rashid, where service selection is flexible based on available service to at least partially meet QOS requirements, because it would have provided a predictable result in providing flexibility in obtaining service over a network to meet QOS requirements.

Regarding **Claim 13**, Zhang does not teach:

13. (Original) A computerised method according to claim 12 in which the procurer can deny variation to a performance expectation if the variation was foreseeable when an initial performance expectation was set.

Rashid teaches holding requirements fixed – i.e. thus the variations are foreseeable, but the service provider and requester both agree to a minimum level of QOS – see above as per claim 12. One of ordinary skill in the art would combine Zhang and Rashid because the combination would have been predictable in ensuring that QOS requirements are met even though there are foreseeable variations in network performance.

Regarding **Claim 14**, Zhang does not teach, but Rashid teaches:

14. (Currently amended) A computerised method claim 11 in which expectation differential data is measured relative to a combination of

the initial performance expectation value and one or more subsequent incremental changes to the performance expectation that were not foreseeable when the initial performance expectation was set.

Rashid teaches, as discussed above, a QOS provision based on "controlled load" where the requirements are specified, but incremental variations are acceptable because the service requester is interested in utilizing whatever service is available rather than not having any at all.

One of ordinary skill in the art would combine Zhang and Rashid because the combination would have been predictable in ensuring that some service was provided even though incremental changes occurred in the service below the initially stated QOS requirements.

Regarding **Claim 16**, Zhang teaches:

16. (Currently amended) A computerised method according to claim 15 wherein

defining at least one performance expectation for the performance of the service includes:

As discussed above, Zhang teaches setting QOS requirements in acquiring network service, however Zhang does not teach, but Rashid teaches:

receiving a service plan from a chosen service provider, and

setting at least one performance expectation for the performance of the service in accordance with the service plan if a procurer approves the service plan.

Page 4 bottom, Rashid teaches having an SLA in place (i.e. receiving a service plan from a provider) and setting a performance expectation per the SLA in setting of rigid QOS guarantees.

Rashid teachings suggest the rigid QOS requirements are for those procurers of service that know what their network requirements are and have executed an SLA to meet those requirements (as opposed to those who do not know what their requirements are and utilize a “Best-effort service” approach)

One of ordinary skill in the art would combine Zhang and Rashid because the combination would have been predictable in ensuring that the service was provided through an SLA and QOS requirements where the requirements for operating on a network were known by a user.

Claims 21-29, 32, 34, 38-40 recite similar limitations addressed by the rejection of **Claims 12-14 and 16** above, and are therefore rejected under the same rationale.

Furthermore regarding Claims 32 and 34, Rashid teaches a method that performs the functionality of the components (i.e. the expectation variation component re claim 32 and the data capture component re claim 34) using a computer system with a resource manager according to the hardware architecture of Figure 1. While Rashid

does not explicitly teach the components claimed, Rashid teaches the functionality being performed by a computer system with at least one module (i.e a resource manager). As discussed above with respect to claims 30, 31, 33 ,35 and 36. making components separable or integral when the same functionalities are provided by a computer system does not convey patentability. Thus the examiner's position is that it would have been obvious to provide the claimed functionalities in separate modules as claimed because it is well settled that making components separable or integral does not convey patentability.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

A scalable QoS-aware service aggregation model for peer-to-peer computing grids[PDF] from psu.eduX Gu… - 2002 - computer.org

US 6842463 by Drwiega teaches management of bandwidth capacity in telecommunication networks.

US 6748220 by Chow teaches resource allocation in wireless networks.

US 20060206619 by Dan teaches electronic service level agreements for website hosting.

US 6785737 by Lee teaches a method for network resource allocation.

US 7124188 by Mangipudi teaches a method for adaptive service level management.

US 7263065 by Cahn teaches a network having multiple QOS levels.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jonathan G. Sterrett whose telephone number is 571-272-6881. The examiner can normally be reached on 8-6.
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Beth Boswell can be reached on 571-272-6737. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JGS 12-17-2010

/Jonathan G. Sterrett/

Primary Examiner, Art Unit 3623